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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,513	11/12/2003	Maria da Graca Henriques Vicente	0211.1 Vicente	8945

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PATENT DEPARTMENT
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EXAMINER

WALLENHORST, MAUREEN

ART UNIT PAPER NUMBER

1743

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,513

Applicant(s)

VICENTE, MARIA DA GRACA
HENRIQUES

Examiner

Maureen M. Wallenhorst

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1743

1. Applicant is informed that the Examiner of this application has changed to Examiner Maureen Wallenhorst whose contact information is set forth below.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Vicente et al (WO 01/85736, submitted in the Information Disclosure Statement filed on November 12, 2003).

Vicente et al teach of porphyrin-based neutron capture agents for cancer therapy. The porphyrin compounds contain carboranyl groups attached to the porphyrin compound by a carbon-carbon linkage. The porphyrin compound has the general formula 1 depicted on page 5 of Vicente et al, where M is 2H or a divalent metal ion, R1 and R2 are each independently hydrogen, alkyl or hydroxyalkyl, and R3 through R6 are hydrogen or a substituted phenyl group. The substituted phenyl group has the formula II depicted on page 5 of Vicente et al. At least one of the R7 through R11 groups is a nido-carboranyl or closo-carboranyl group attached to the phenyl group by a carbon-carbon linkage. The divalent metal ion can be zinc. See the various porphyrin macrocycle compounds depicted in Figures 1-8 of Vicente et al. Vicente et al teach that the carboranylporphyrins have the ability to selectively bind to molecules in tumor cells, and therefore, are useful in cancer treatments involving boron neutron capture therapy (BNCT). See the last paragraph on page 7 of Vicente et al. It would be inherent that the carboranylporphyrin

Art Unit: 1743

compounds taught by Vicente et al would selectively bind to molecules in tumor cells by either a coordination to the metal ion in the core of the porphyrin macrocycle, by an electrostatic interaction with one or more carboranyl groups on the porphyrin macrocycle or by a interaction with the porphyrin macrocycle since the carboranyporphyrin compounds taught by Vicente et al have the exact same chemical structure as the compounds recited in the instant claims, and therefore, one of ordinary skill in the art would expect the compounds taught by Vicente et al to chemically behave in the same manner as the instantly claimed compounds.

The reference to Vicente et al qualifies as prior art under 35 USC 102(e) since it has a different inventive entity than the instant application, the international filing date is after November 29, 2000, the international application designated the United States, and the international application was published in English.

4. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Miura et al (US Patent no. 4,959,356).

Miura et al teach of porphyrin compounds useful for binding to brain tumor cells in boron neutron capture therapy. The compounds shown in reaction scheme 1 have $C_2B_{10}H_{10}$ carboranyl groups linked to the porphyrin core by an ethylenyl linkage. Synthesis of these compounds is taught in the passage spanning line 1, column 7 to line 56, column 8. See also claims 1-7 of Miura et al that recite porphyrin compounds having $C_2B_{10}H_{10}$ carboranyl groups linked to the porphyrin core by an ethylenyl linkage. Miura et al teach that these porphyrin compounds selectively bind to molecules in tumor cells. It would be inherent that the carboranyporphyrin compounds taught by Miura et al would selectively bind to molecules in tumor cells by either a coordination to the metal ion in the core of the porphyrin macrocycle, by an electrostatic

Art Unit: 1743

interaction with one or more carboranyl groups on the porphyrin macrocycle or by a interaction with the porphyrin macrocycle since the carboranylporphyrin compounds taught by Miura et al have the exact same chemical structure as the compounds recited in instant claims 1-6, and therefore, one of ordinary skill in the art would expect the compounds taught by Miura et al to chemically behave in the same manner as the instantly claimed compounds.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Please make note of: Vicente et al (US Patent no. 7,067,653) which corresponds to WO 01/85736), and Miura et al (US Patent no. 5,877,165) who teach of compounds #5-7 depicted in Figure 2 that have $C_2B_{10}H_{10}$ carboranyl groups linked to the porphyrin core by an ethylenyl linkage.

6. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

The previous grounds of rejection of the claims under 35 USC 112, second paragraph made in the last Office action mailed on March 29, 2006 have been withdrawn in view of Applicant's amendments to the claims. The previous rejection of the claims under 35 USC 102(e) as being anticipated by Miura et al (US patent no. 6,566,517) has also been withdrawn in view of Applicant's persuasive arguments. However, this Office action includes new grounds of rejection for the claims, as set forth above. Because of these new grounds of rejection, this Office action is not being made final.

Art Unit: 1743

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen M. Wallenhorst whose telephone number is 571-272-1266. The examiner can normally be reached on Monday-Thursday from 6:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden, can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maureen M. Wallenhorst
Primary Examiner
Art Unit 1743

mmw

November 28, 2006

Maureen M. Wallenhorst
MAUREEN M. WALLENHORST
PRIMARY EXAMINER
GROUP ~~1743~~ 1700